

The background of the entire slide is a dense, close-up photograph of roasted coffee beans. The beans are dark brown with some lighter, golden-brown highlights, showing their characteristic shape and the crease down the middle. They are piled together, creating a textured, granular appearance.

CRUNCHING COFFEE AS A COMMODITY

Unemployment Analyst - Immanuel Onuoha
Data Analyst II - Joe Brueneman
Commodity Analyst - Martin Perez
International Analyst - Theint Zin Tun (Sophia)
Stock Market Analyst - Sung Youn Hutchison



BACKGROUND

Coffee is a highly traded good internationally among many countries. It is also a heavily imported good for the U.S.

- 3 in 4 Americans **drink coffee every day** (74%)*
- 49% of people drink **3 to 5 cups of coffee a day**

But what affects the price and how does the price effect the world?

QUESTIONS TO ANSWER

**COFFEE vs
STOCK MARKET**



**COFFEE vs
GLOBAL ECONOMY**



**COFFEE vs
PANDEMIC**



**COFFEE vs
COMMODITY**



HYPOTHESIS: COFFEE vs. STOCK MARKET

What are the stock prices of major players vs coffee prices?

HYPOTHESIS

The global coffee price increases will impact the stock prices of major coffee companies.

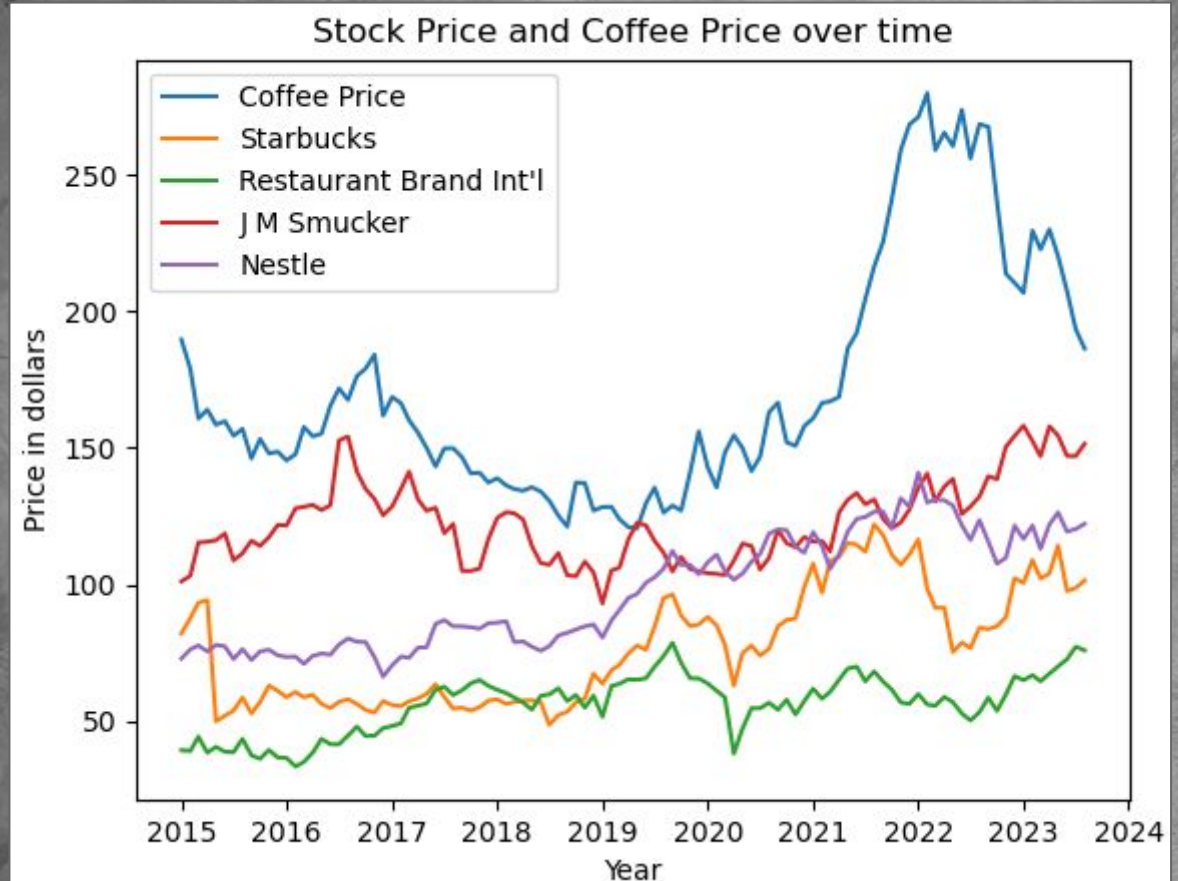
NULL HYPOTHESIS

There will be no correlation between the global coffee price and the major coffee companies' stock prices.



ANALYSIS: COFFEE vs. STOCK MARKET

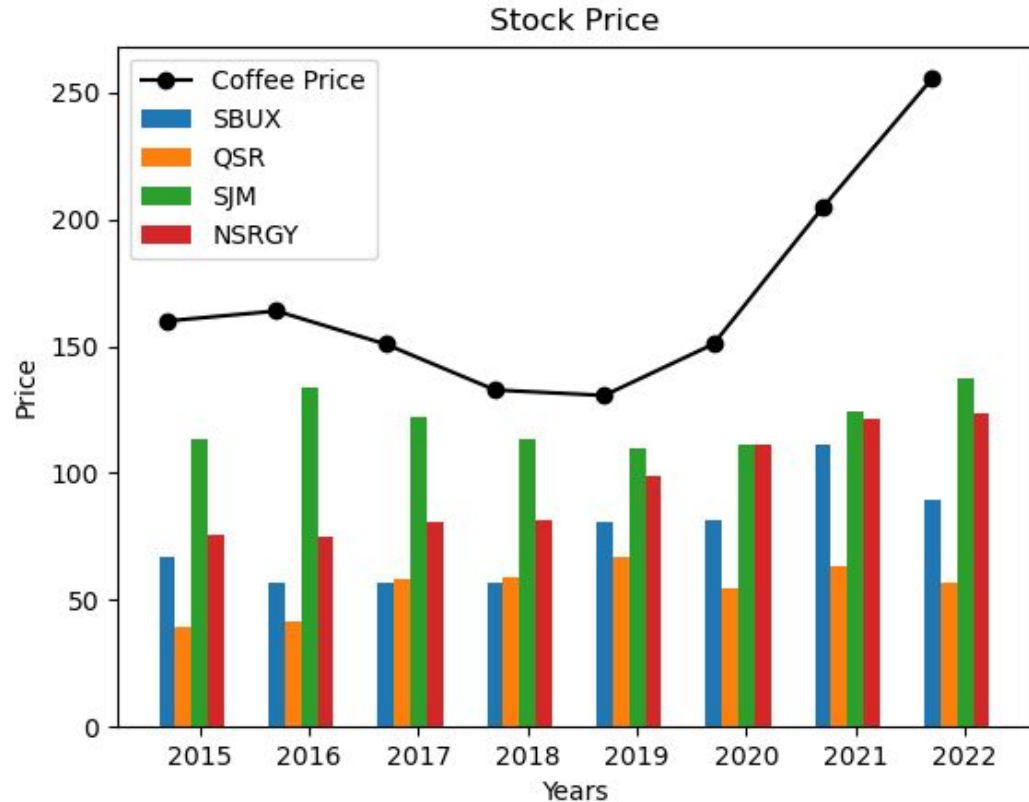
The coffee price change does not have the same impact to every major coffee company.



ANALYSIS: COFFEE vs. STOCK MARKET

Correlation Statistic

SBUX Price	0.590587
QSR Price	0.008837
SJM Price	0.776704
NSRGY Price	0.658147



HYPOTHESIS: COFFEE vs. GLOBAL ECONOMY

Is GDP of major coffee-producing countries influenced by the price of coffee globally?

HYPOTHESIS

The coffee price changes will drive fluctuations of those countries' GDPs.

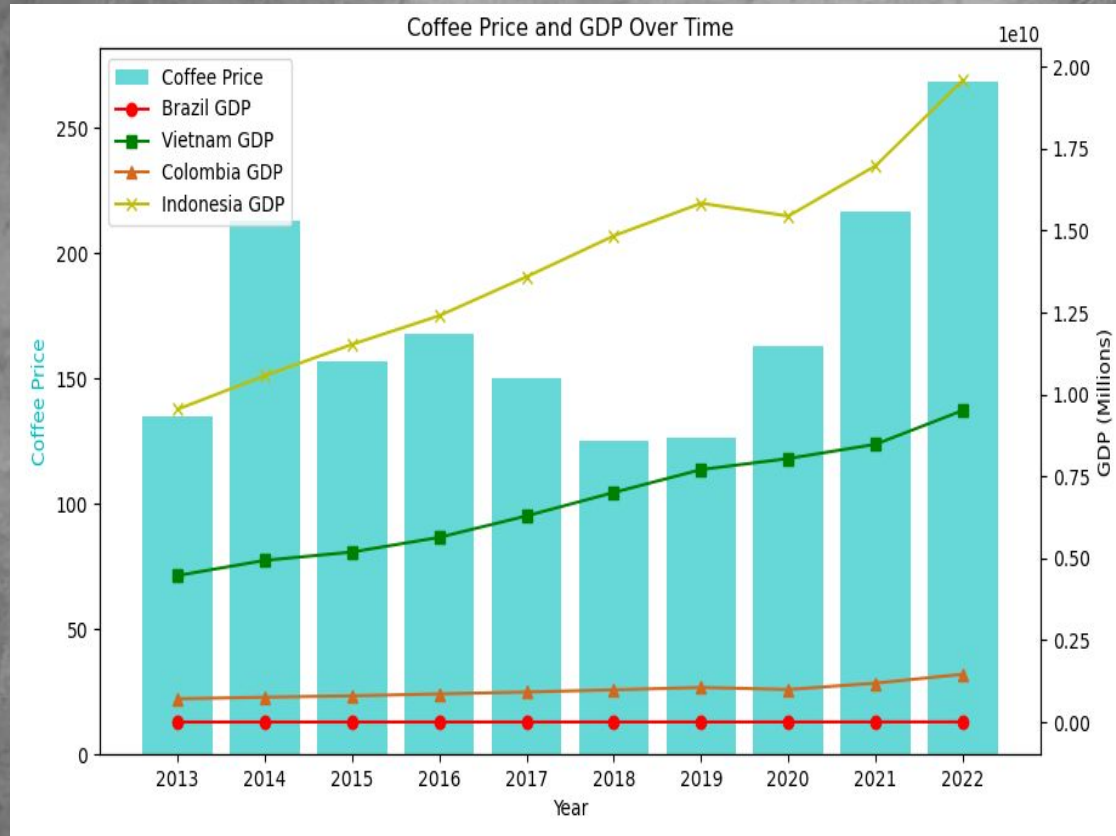
NULL HYPOTHESIS

There will not be a correlation between the major coffee producing countries' GDPs and the coffee prices.



ANALYSIS: COFFEE vs. GLOBAL ECONOMY

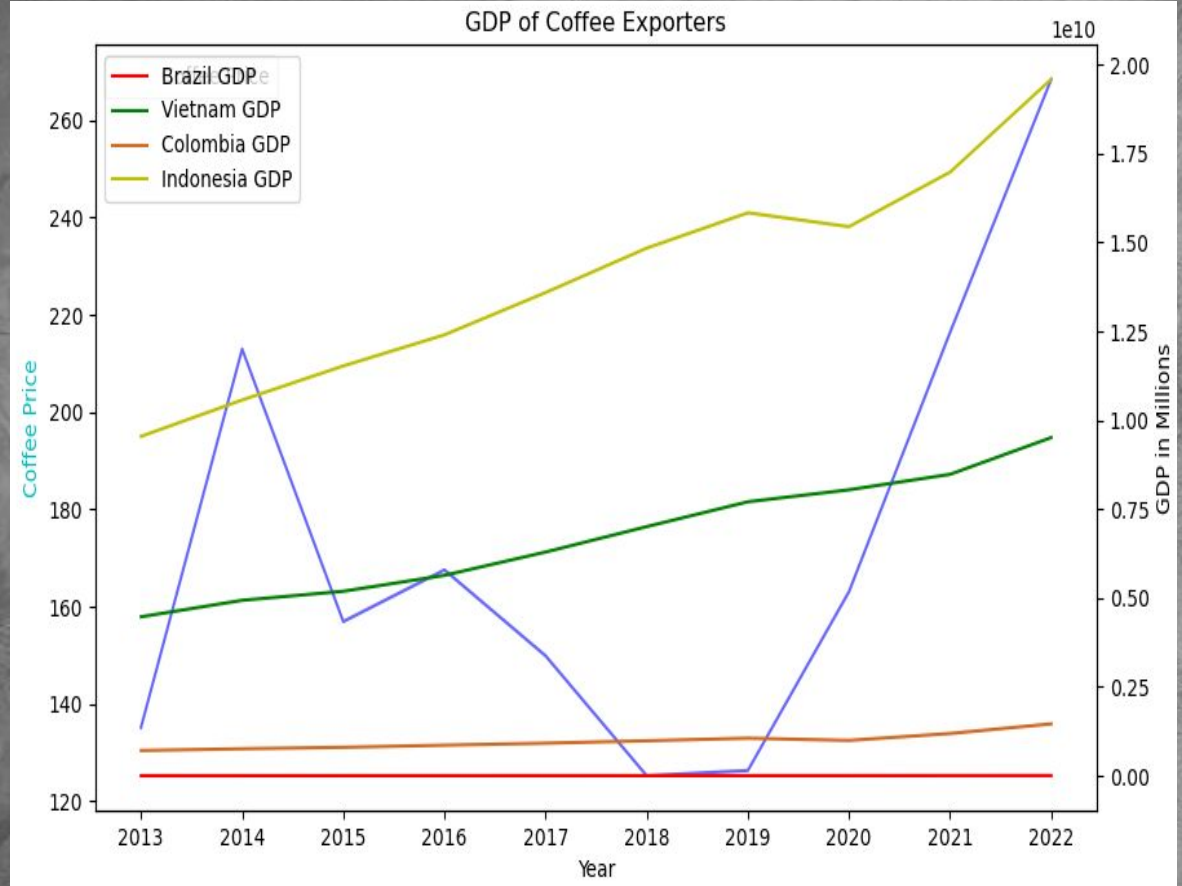
There are weak to moderate correlations between coffee price and the major coffee producing countries' GDPs.



ANALYSIS: COFFEE vs. GLOBAL ECONOMY

Correlation Statistic

Brazil	0.634914
Vietnam	0.459680
Columbia	0.611800
Indonesia	0.472200



HYPOTHESIS: COFFEE vs. PANDEMIC

How did the global coffee price get affected by the rise of unemployment during the pandemic?

HYPOTHESIS

There will be an inverse relationship between unemployment during the COVID-19 pandemic and coffee prices.

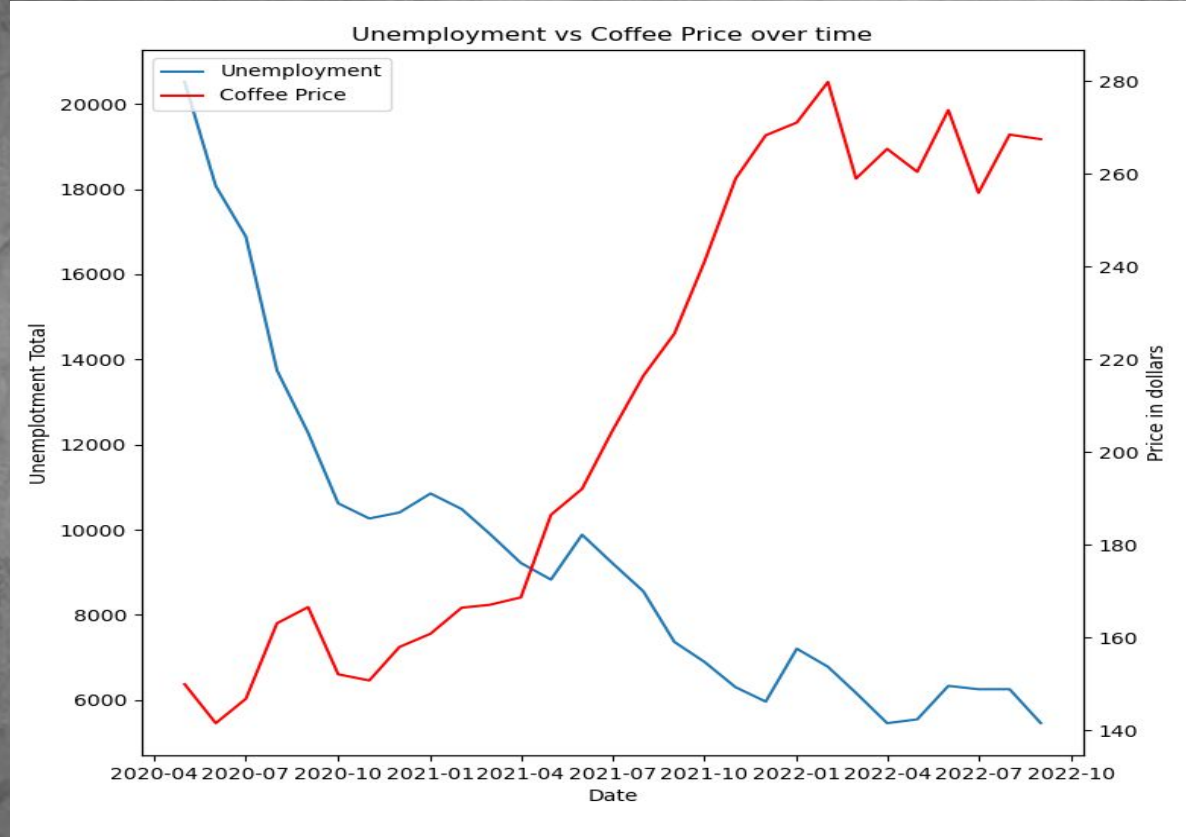
NULL HYPOTHESIS

A slowdown in the labor market during the pandemic will not impact coffee prices because coffee is a major staple in people's daily life.



ANALYSIS: COFFEE vs. PANDEMIC

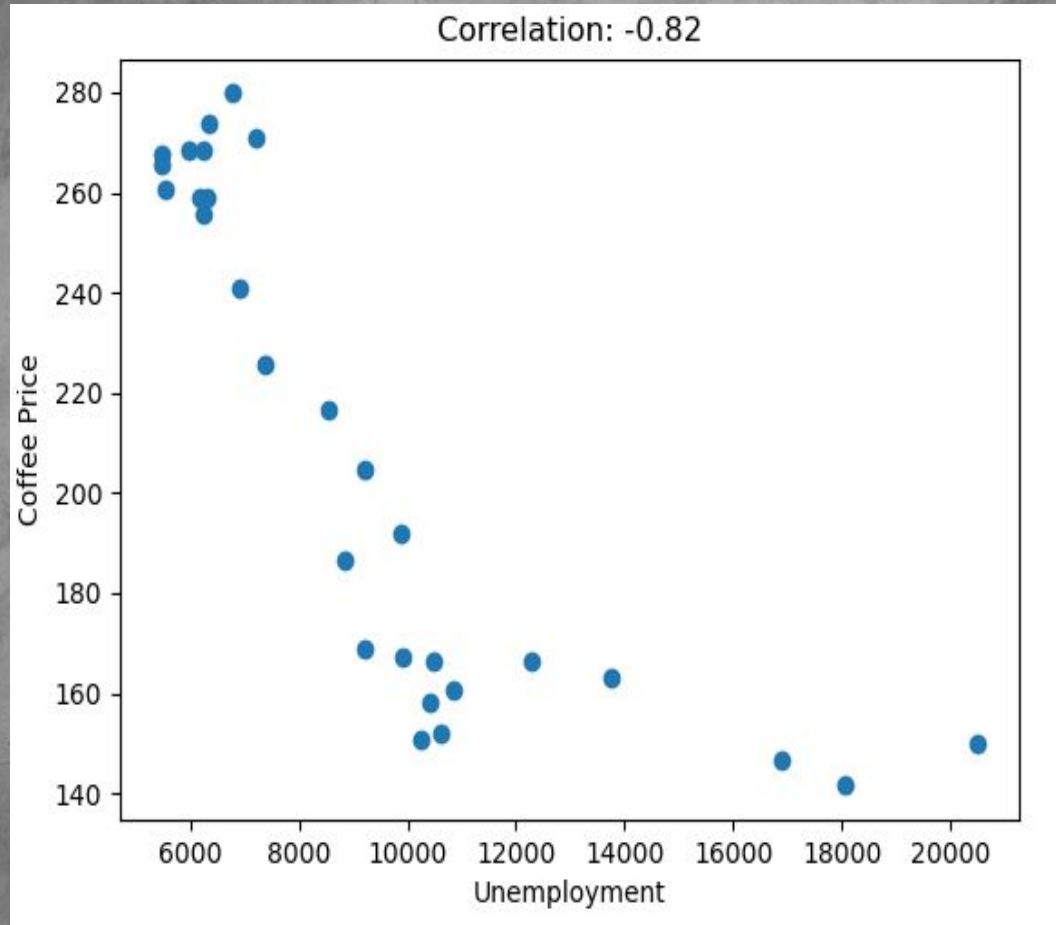
Hunch: There is a strong negative correlation between unemployment during the COVID-19 pandemic and coffee prices.



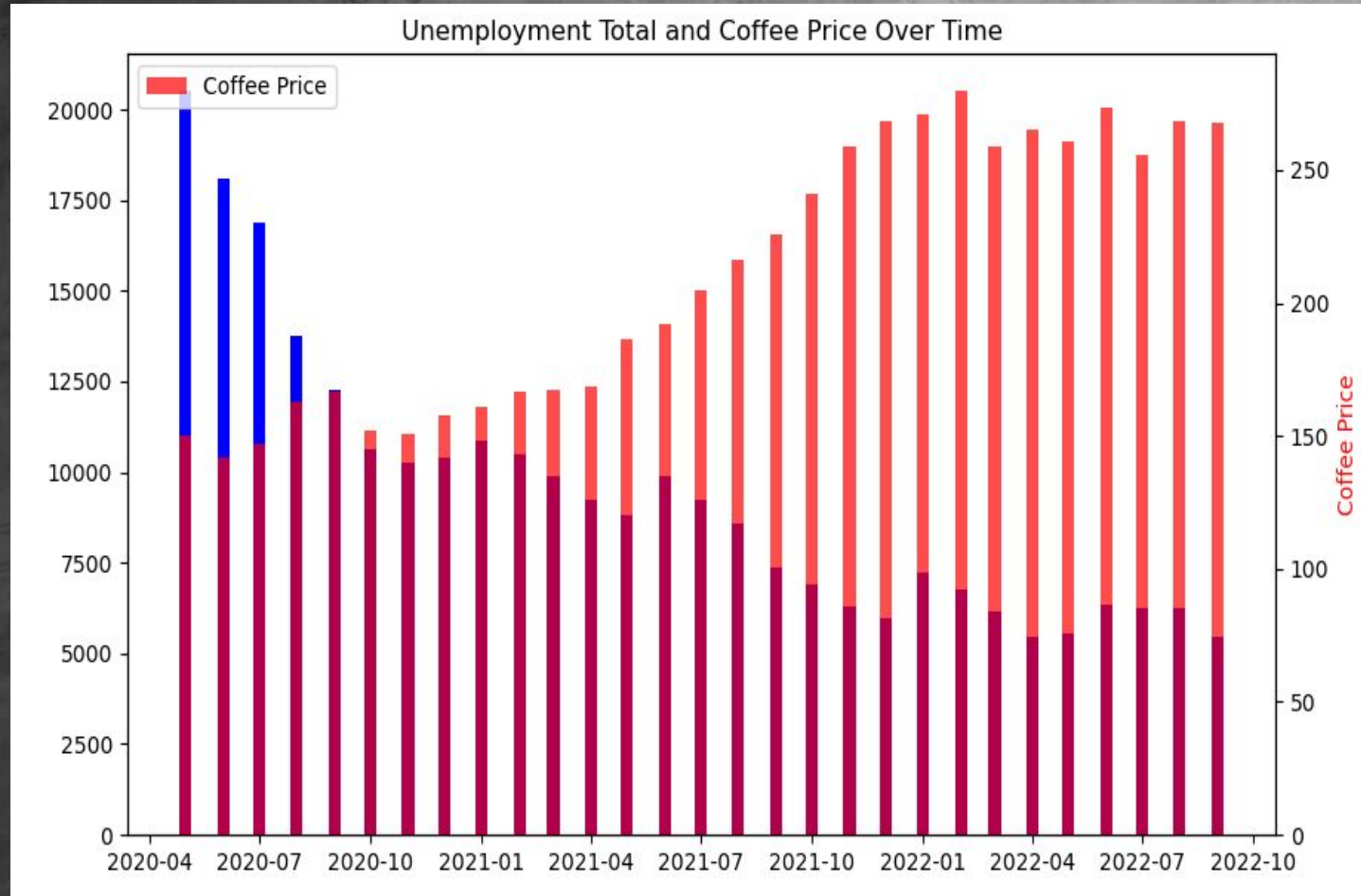
ANALYSIS: COFFEE vs. PANDEMIC

Correlation Statistic

Unemployment	- 0.82
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ANALYSIS: COFFEE vs. PANDEMIC



HYPOTHESIS: COFFEE vs. COMMODITY

Does the price of Oil(West Texas Intermediate) or Natural Gas impact the price of imported coffee from major players?

HYPOTHESIS

There will be a significantly positive relationship in the the price fluctuations between fuel (oil/natural gas) and coffee.

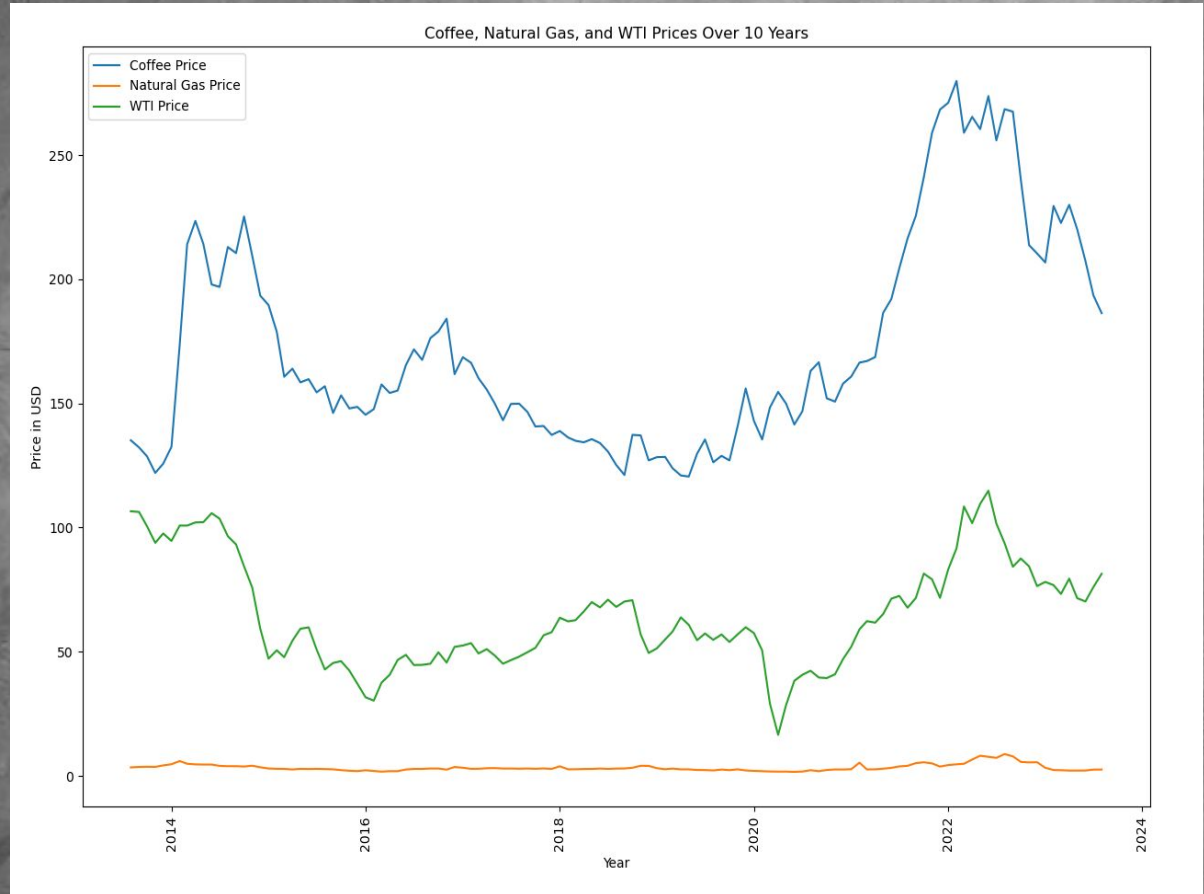
NULL HYPOTHESIS

Due to the labor-intensive nature of the coffee production industry, global coffee prices will be primarily driven by other factors, such as labor costs, rather than the fuel prices that affect freight costs.



ANALYSIS: COFFEE vs. COMMODITY

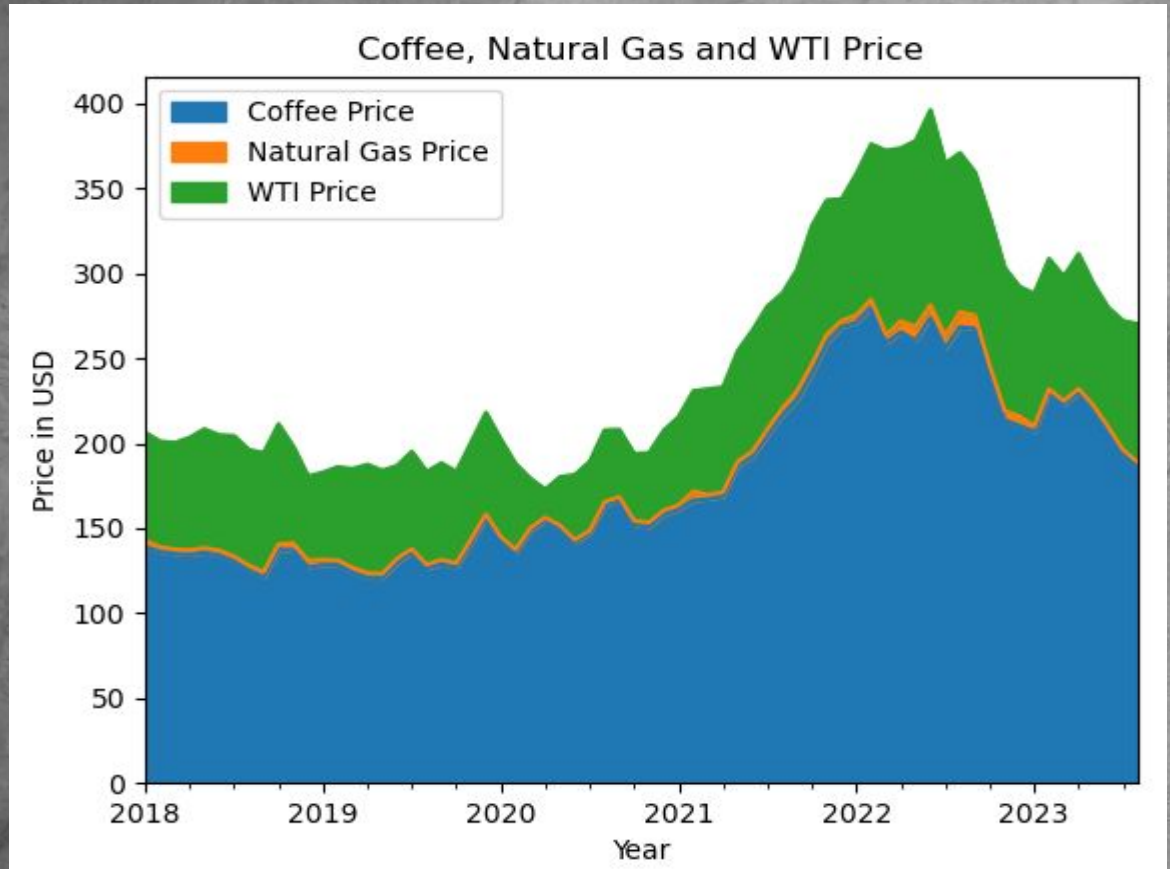
There are moderate correlations between coffee price and fuel prices observed.



ANALYSIS: COFFEE vs. COMMODITY

Correlation Statistic

Natural Gas	0.655807
Oil (WTI)	0.545287



CONCLUSION

❖ **Coffee vs. Stock Market**

- Coffee price does not have a significant and consistent impact on stocks

❖ **Coffee vs. Global Economy**

- Coffee price has an impact, but it is a very small contributor

❖ **Coffee vs. Pandemic**

- Pandemic data suggests a relationship between Unemployment and Coffee, however further research into external factors is required

❖ **Coffee vs. Commodity**

- Shipping costs have an impact on price of Coffee, but not a major impact

ISSUES WITH DATA

- **Missing/empty data excluded from data frames.**
- **Stock prices are determined by when the company started and thus had discrepancies when combining different sources.**
- **GDP reporting is different for each country**

MOVING FORWARD

- **Coffee consumption statistics**
- **Coffee sales account for what % of revenue/GDP**
- **Tea? Energy drinks?**
- **Compare unemployment rates and coffee rates pre-pandemic**

Data Set and other Sources (Bibliography)

- <https://fred.stlouisfed.org/docs/api/fred/fred.html>
- <https://data.nasdaq.com/tools/apihttps://www.alphavantage.co/documentation/>
- <https://data.imf.org/?sk=388dfa60-1d26-4ade-b505-a05a558d9a42>
- <https://api.census.gov/data/timeseries/eits/mrts.html>
- <https://www.alphavantage.co/documentation/>
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- https://data.nasdaq.com/api/v3/datasets/WIKI/SBUX.json?start_date=2013-07-01&end_date=2023-08-01&order=asc&column_index=4&collapse=monthly
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